

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (currently amended):** A method for forming
2 printing inspection data which is used in a printing
3 inspection apparatus for inspecting the printed state of
4 the cream solder of a board after a screen printing to form
5 the inspecting data including configuration and position
6 data showing the configurations and positions of solder
7 printing parts in which the cream solder is printed on a
8 printing surface,
9 wherein, in a mask data obtaining step for obtaining
10 element configuration and position data showing the
11 configurations and the positions of element solder printing
12 parts printed on electrodes for connecting together
13 electronic parts provided on the circuit forming surface of
14 the board by detecting opening parts of a mask plate on the
15 basis of images obtained by picking-up the images of the
16 mask plate used for the screen printing by a camera, when
17 the image pick-up visual field of the camera is
18 sequentially moved to a plurality of visual field positions
19 set to the mask plate in accordance with a prescribed
20 moving sequence to obtain a plurality of images, if an
21 incomplete opening part in which a part of the opening part

22 partly protrudes so that a configuration is not completed
23 is detected from an image obtained in one image pick-up
24 visual field, a process for obtaining data of a complete
25 opening part to which the incomplete opening part belongs
26 is carried out in accordance with the detected result.

1 **Claim 2 (original):** A method for forming printing
2 inspection data which is used in a printing inspection
3 apparatus for inspecting the printed state of the cream
4 solder of a board after a screen printing to form the
5 inspecting data including configuration and position data
6 showing the configurations and positions of solder printing
7 parts in which the cream solder is printed on a printing
8 surface,

9 wherein, in a mask data obtaining step for obtaining
10 element configuration and position data showing the
11 configurations and the positions of element solder printing
12 parts printed on electrodes for connecting together
13 electronic parts provided on the circuit forming surface of
14 the board by detecting opening parts of a mask plate on the
15 basis of images obtained by picking-up the images of the
16 mask plate used for the screen printing by a camera, when
17 the image pick-up visual field of the camera is
18 sequentially moved to a plurality of visual field positions
19 set to the mask plate in accordance with a prescribed
20 moving sequence to obtain a plurality of images, if an

21 incomplete opening part in which a part of the opening part
22 partly protrudes so that a configuration is not completed
23 is detected from an image obtained in one image pick-up
24 visual field, an adjacent image pick-up visual field in the
25 end of the image in which the incomplete opening part is
26 detected is overlapped on the one image pick-up visual
27 field by an overlap margin determined by the size of the
28 incomplete opening part in the image.

1 **Claim 3 (original):** A method for forming printing
2 inspection data according to claim 2, wherein the plural
3 visual field positions are set in a substantially grid
4 shaped arrangement and the prescribed moving sequence is a
5 moving sequence performed in such a manner that a liner
6 column movement toward the same direction from a start end
7 to a terminal end in a first direction in the grid shaped
8 arrangement is repeated in a second direction perpendicular
9 to the first direction.

1 **Claim 4 (original):** A method for forming printing
2 inspection data according to claim 3, wherein the overlap
3 margin in the second direction of the overlap margins in
4 which two adjacent image visual fields are overlapped in
5 the second direction is set on the basis of a maximum size
6 of sizes of the incomplete opening parts in the second
7 direction which are detected in the first column movement

8 and the same overlap margin in the second direction is used
9 in a column movement subsequent to the first column
10 movement.

1 **Claim 5 (original):** A method for forming printing
2 inspection data which is used in a printing inspection
3 apparatus for inspecting the printed state of the cream
4 solder of a board after a screen printing to form the
5 inspecting data including configuration and position data
6 showing the configurations and positions of solder printing
7 parts in which the cream solder is printed on a printing
8 surface,

9 wherein, in a mask data obtaining step for obtaining
10 element configuration and position data, showing the
11 configurations and the positions of element solder printing
12 parts printed on electrodes for connecting together
13 electronic parts provided on the circuit forming surface of
14 the board by detecting opening parts of a mask plate on the
15 basis of images obtained by picking-up the image of the
16 mask plate used for the screen printing by a camera, when
17 the image pick-up visual field of the camera is
18 sequentially moved to a plurality of visual field positions
19 set to the mask plate in accordance with a prescribed
20 moving sequence to obtain a plurality of images, if an
21 incomplete opening part in which a part of the opening part
22 partly protrudes so that a configuration is not completed

23 is detected from an image obtained in one image pick-up
24 visual field, the incomplete opening part is registered as
25 an opening part to be connected in the image, and then, a
26 connecting process is carried out in which an opening part
27 to be connected that is already registered in an image
28 obtained in an adjacent image pick-up visual field on the
29 edge of the image edge where the opening part to be
30 connected is detected and corresponds to the opening part
31 to be connected is connected to the opening part to be
32 connected to form one opening part.

1 **Claim 6 (original):** A method for forming printing
2 inspection data according to claim 5, wherein the plural
3 visual field positions are set in a substantially grid
4 shaped arrangement and the prescribed moving sequence is a
5 moving sequence performed in such a manner that a liner
6 column movement toward the same direction from a start end
7 to a terminal end in a first direction in the grid shaped
8 arrangement is repeated in a second direction perpendicular
9 to the first direction.

1 **Claim 7 (original):** A method for forming printing
2 inspection data according to claim 6, wherein when the
3 opening part to be connected is dislocated from the
4 already-registered opening part to be connected in the
5 connecting process, both the opening parts are respectively

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6 moved by half an amount of dislocation toward the central
7 point of dislocation.